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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,249	05/23/2006	Hidetsugu Ikeda	290850US0PCT	2018

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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

CLARK, GREGORY D

ART UNIT	PAPER NUMBER
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1794

NOTIFICATION DATE	DELIVERY MODE
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10/01/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/580,249	Applicant(s) IKEDA ET AL.	
	Examiner GREGORY CLARK	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The examiner acknowledges receiving the applicant's arguments/remarks dated 07/29/2009. Claims 1-24 pending.

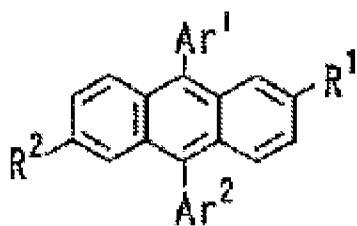
Rejections and objections made in previous office action that do not appear below have been overcome by applicant's amendments and therefore the arguments pertaining to these rejections/objections will not be addressed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

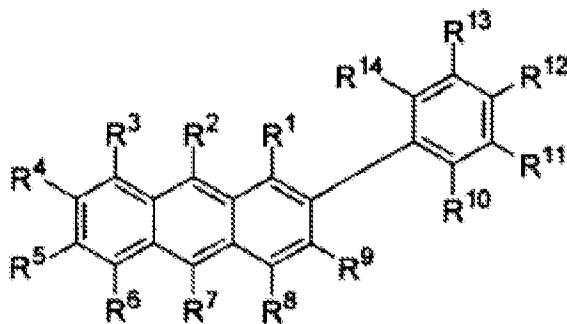
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 1-5, 8-12, 15-16 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over ICHINOSAWA (JP 2003-146951).**
2. **Regarding Claims 1-2 and 8, ICHINOSAWA discloses a compound represented by the following generic formula (1):**



Formula (1)

The applicant claims the generic structure of formula (2) shown below:



Formula (2)

The structure of formula (1) taught by ICHINOSAWA reads on the generic structure formula (2).

The applicant claims R¹-R¹⁴ can be a hydrogen atom, ICHINOSAWA teaches a hydrogen atom in R¹, R³, R⁴, R⁶, R⁸ and R⁹ positions.

The applicant claims the positions located between the R¹ and R⁹ along with the R⁵ position can be a substituted or unsubstituted alkenyl group having 1 to 40 carbons or a substituted or unsubstituted aryl group having 6 to 40 carbons atoms.

ICHINOSAWA teaches these two positions are substituted with a 5- or 6-membered aromatic hydrocarbon ring (abstract). The generic formula (1) taught by

Art Unit: 1794

ICHINOSAWA reads directly on the generic formula (1) claimed by the applicant (per claim 1).

The applicant claims R2 or R7 can be a substituted or unsubstituted aryl group having 6 to 40 carbons atoms, ICHINOSAWA teaches a aryl group in the R2 or R7 positions (per claims 2 and 8).

The applicant claims at least one of R10 or R14 is a substituted or unsubstituted aryl group having 6 to 40 carbons.

ICHINOSAWA mentions that the R1 or R2 in formula 1 can be a substituted aryl group.

The examiner takes the position that a substituted aryl group in the R1 or R2 of formula 1 is inclusive of an aryl groups in the R10 or R14 position

3. **Regarding Claim 9**, ICHINOSAWA discloses that the structure of formula (1) is a material used in an organic electroluminescent device (abstract). ICHINOSAWA discloses a hydrogen atom in R1, R3, R4, R6, R8-R14, an aryl group in the R2, R7, R5 and R12 positions (abstract).

4. **Regarding Claims 3, 10 and 15-16**, ICHINOSAWA discloses that the materials based on formula (1) compound have been used to produce of an organic electroluminescent element excellent in heat resistance, having low driving voltage and high luminous efficiency. ICHINOSAWA fails to mention a luminescent solution containing the aromatic materials of formula (1).

The examiner takes the position that the compounds based on formula (1) disclosed by ICHINOSAWA are luminescent and it would have been obvious for a skilled artisan at the time of the invention to use a suitable solvent system to render such materials in solution.

5. **Regarding Claims 4, 5, 11-12 and 20-22**, ICHINOSAWA discloses that the structure of formula (1) (aromatic compound) is a material used in an organic electroluminescent device (abstract). The organic electroluminescent device has a light emitting layer (called a luminous layer by the applicant) between an anode and a cathode (called a negative pole by the applicant) (paragraph 97). The structure of formula (1) taught by ICHINOSAWA reads on the elected structure derived from formula (2) claimed by the applicant differs (as discussed above).

ICHINOSAWA discloses the parent ring(s) system of the applicants' formula (1) and the area of application claimed by the applicant. Variations in the substituent groups attached to the ring(s) system disclosed by the ICHINOSAWA are viewed obvious synthetic variants that would have similar properties, absent unexpected results.

6. **Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over ICHINOSAWA (JP2003-146951) in view of Kawamura (6074734).**

Art Unit: 1794

7. **Regarding Claims 6, 7, 13-14, 18-19 and 23-24**, ICHINOSAWA fails to teach an organic electroluminescent device wherein the light emitting layer further contains an arylamine, a namely styrylamine compound.

Kawamura discloses an organic luminescence device which containing an organic layer wherein the organic layer at least contains a layer of a light emitting zone and a layer of a hole transporting zone which comprises a hole injecting layer containing the triamine (abstract). Kawamura further discloses that the triamine compound can be represented by styrylamine compounds (column 21, lines 21-22). Kawamura further discloses that an organic electroluminescence device having a higher efficiency of light emission can be obtained by using a light emitting zone with a hole injecting layer containing a styrylamine compound (column 21, lines 54-55).

With a reasonable expectation of success, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the light emitting zone of ICHINOSAWA by adding a styrylamine compound taught by Kawamura since Kawamura discloses the incorporation of such materials into the light emitting zone of organic electroluminescent device promotes a higher efficiency of light emission (column 21, lines 54-55).

Response to Amendment

The applicants' arguments are centered on an aryl group in the R10 or R14 position of the phenyl ring bonded to the anthracene ring.

The examiner counters that ICHINOSAWA discloses the R1 or R2 positions in formula 1 can be a substituted aromatic group which is inclusive of ortho substitution (R10 or R14) on the aromatic ring.

The applicant argues the ortho substitution surprisingly leads to unexpected results with improved solubility.

The examiner counters that the applicants' arguments in the specification in and paragraph 80 shows a failure of a compound from JP 2001-335516 to spin coat compared to a representative compound that would be inclusive of the substituted aromatic groups in the Ar1 position of formula 1. The purported claimed superiority of the applicants' ortho based compounds with respect to solubility and spin coating are not convincing; as the compounds were not compared against a broader selection of solvent systems or coating methods to determine if other commonly used approaches may be just as effective with other compounds. The applicants have neither compared their materials to the closest prior art nor given a sufficient number of comparisons to support a showing of unexpected results commensurate in scope the claimed generic compound. A single comparison is insufficient to be convincing of the attributes of an entire genus of compounds.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kawamura (6,074,734) discloses an organic electroluminescent device containing styrylamine.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GREGORY CLARK whose telephone number is (571)270-7087. The examiner can normally be reached on M-Th 7:00 AM to 5 PM Alternating Fri 7:30 AM to 4 PM and Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on (571) 272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/
Supervisory Patent Examiner, Art Unit 1794

GREGORY CLARK/GDC/
Examiner
Art Unit 1794

Application/Control Number: 10/580,249
Art Unit: 1794

Page 9